



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,645	12/17/2001	Tomohiko Koda	03280067 AA	8528

7590 10/13/2004

WHITHAM, CURTIS & CHRISTOFFERSON, P.C.
11491 Sunset Hills Road, Suite 340
P.O. Box 9204
Reston, VA 20190

EXAMINER

KIM, PAUL D

ART UNIT PAPER NUMBER

3729

DATE MAILED: 10/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/015,645

Applicant(s)

KODA ET AL.

Examiner

Paul D Kim

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 2-7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reinten (US PAT. 6,280,022) in view of Seifert et al. (US PAT. 5,900,215).

Reinten teaches a process of making an ink jet head comprising steps of: providing an actuator unit (22) formed with a plurality of actuators (24) extending in the same direction from a base portion to be in parallel with one another, each of the plurality of actuators being made of a plurality of piezoelectric elements extendable in a longitudinal direction causing tip ends of the plurality of actuators to move away from the base portion when an electrical signal is applied to the each of the plurality of actuators; providing a diaphragm (30); providing an ink channel unit (16) formed with a plurality of ink channels corresponding to respective ones of the plurality of actuators individually; adhering the actuator unit onto one surface of the diaphragm while abutting the tip ends of the plurality of actuators against the one surface of the diaphragm; and attaching the ink channel unit to another surface of the diaphragm so that the plurality of ink channels are positioned in confronting relation with the respective ones of the

Art Unit: 3729

plurality of actuators individually as shown in Figs. 1-3 (see also col. 3, line 50 to col. 4, line 24).

However, Reinten does not teach how the actuator unit is adhered to the diaphragm such as a dipping technique which the tip ends of the plurality of actuators are dipped into an adhesive pond so that an adhesive agent clings to the tip ends or the plurality of actuators while maintaining a state in which an imaginary first line that connects the tip ends of the plurality of actuators is in parallel with an imaginary second line that connects borders between immersed and non-immersed portions of the plurality of actuators. Seifert et al. teach a process of making a sensor including a dipping process to dip a tip of a fiber into an adhesive pond so that the adhesive agent clings to the tip end in order to improve mechanical bonding strength as shown in Fig. 1. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of bonding the actuator unit adhered to the diaphragm of Reinten by a dipping technique as taught by Seifert et al. in order to improve mechanical bonding strength. Even though Seifert et al. show the process of dipping single fiber into the adhesive pond, it would be obvious at the time the invention to a person having ordinary skill in the art to dip a plurality of fibers into the adhesive pond to coat tips of the fibers of Seifert et al. in order to reduce a processing time and cost.

Allowable Subject Matter

3. Claims 2-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to disclose the claimed invention such that at least two positioning members are formed defining reference positions, and each of the plurality of actuators has an inactive portion at its tip end, the inactive portion being non-responsive to the electrical signal, and wherein the dipping step comprises bringing the imaginary second line to be substantially in coincidence with an imaginary third line that connects the reference positions and also to be within the inactive portion when dipping the tip ends or the plurality of actuators into the adhesive pond.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D Kim whose telephone number is 703-308-8356. The examiner can normally be reached on Tuesday-Friday between 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3729

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul D Kim
Examiner
Art Unit 3729